SAMPLE CURRICULUM PACKET

WIDS READY TO LAUNCH · CURRICULUM

CNC Operator: Lathe

Sample Curriculum Packet

A look inside the complete curriculum package: program design, outcome matrices, course designs, and performance assessment tasks.

WHAT YOU RECEIVE

The full package is a set of ready-to-use curriculum documents in the WIDS format. Every component connects to the others: program outcomes flow into courses, courses into competencies, and competencies into assessments with scoring guides. The samples provided in this document showcase the components provided with all Workforce Pell programs.

Component	What You Get	In This Sample
1. Program Design	Program description, target population, career titles, entry requirements, industry standards, program outcomes with summative criteria, and the complete list of courses with descriptions	Program profile, 1 of 4 outcomes, course sequence
2. Assigned Outcomes Matrices	Curriculum maps showing where each program outcome and external standard is addressed across courses	Program outcomes matrix and a NIMS excerpt
3. Course Designs	A full design for every course: description, credits, hours, target standards, linked program outcomes, competencies, performance standards, and learning objectives	CNCLATHE 100 profile and 1 of 4 competencies

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Component	What You Get	In This Sample
4. Performance Assessment Tasks	Ready-to-use assessments for every competency: student directions, case studies or skill demonstrations, and scoring guides	1 complete case-study assessment

HOW COMPONENTS CONNECT

Program Design — What graduates must do ▶ **Outcomes Matrices** — Where each skill and standard is taught ▶ **Course Designs** — What each course covers ▶ **Assessment Tasks** — How students prove it

Supports Workforce Pell planning

If your college is considering Workforce Pell, this curriculum gives you much of the documentation the process calls for, including clear outcomes, standards alignment, and assessment evidence. How you implement it is up to your college: how you schedule it, which credential you award, and how you track results. Those decisions, along with state and federal review, will determine whether the program qualifies.

What this curriculum provides:

- Short-term program structure
- Course-by-course alignment to industry standards
- Measurable outcomes and criterion-based scoring guides
- A stackable design that leads to further credentials

WIDS does not determine or guarantee Workforce Pell eligibility.

COMPONENT 1

Program Design

The blueprint for the entire program

WHAT IT IS

The Program Design is the master document for the program. It defines who the program serves, what jobs it leads to, which industry standards it meets, and what every graduate must be able to do. It also lays out the full course sequence.

WHY IT MATTERS TO YOUR COLLEGE

- Gives your curriculum committee, advisory board, and state reviewers one clear picture of the program
- States program outcomes as observable performance, with the criteria graduates are assessed against

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- Documents alignment to industry standards, which you need for program approval and Workforce Pell applications

SAMPLE EXCERPT **Program Outcome 1 of 4**

Outcome 1: Apply safe work practices in a machining environment

Summative Assessment: Skill demonstration in the Capstone course

Criteria: The graduate will

1. wear the personal protective equipment required for a given task
2. isolate equipment energy sources following lockout/tagout procedure
3. demonstrate proper use of the shop's emergency response equipment
4. determine the safe handling and storage requirements for a material from its safety data sheet
5. maintain an assigned work area free of hazards for the duration of a shift
6. move shop materials using correct body mechanics and within posted weight limits

SAMPLE EXCERPT **Course Sequence**

Course	Title	Credits
CNCLATHE 100	CNC Machining Safety and Shop Practices	1
CNCLATHE 101	CNC Machining Engineering Drawings	1
CNCLATHE 102	Math for CNC Machining	2
CNCLATHE 103	CNC Machining Measurement and Inspection	1
CNCLATHE 104	CNC Lathe Set Up	2
CNCLATHE 105	CNC Lathe Operation	2
CNCLATHE 106	CNC Lathe Capstone	1
Total		10

In the full package: All four program outcomes with full criteria, complete course descriptions, and the full standards profile.

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COMPONENT 2

Assigned Outcomes Matrices

Proof of alignment, course by course

WHAT IT IS

The matrices are curriculum maps. They show where each program outcome is addressed across the course sequence. They also show which courses cover each industry standard.

WHY IT MATTERS TO YOUR COLLEGE

- Shows that skills build on purpose from the first course to the capstone
- Provides ready-made evidence of industry alignment for accreditors, state agencies, and Workforce Pell approval
- Helps faculty see how their course fits the whole program

SAMPLE EXCERPT **Program Outcomes Course Assignment Matrix**

Legend: I = Introduced P = Practiced A = Assessed

Program Outcome	100	101	102	103	104	105	106
Apply safe work practices in a machining environment	I				P	P	A
Interpret technical drawings and specifications		I	P	P	P	P	A
Perform set-up and operation of a CNC lathe					I	P	A
Evaluate parts using precision instruments				I		P	A

Column headings are CNCLATHE course numbers.

NIMS CNC Lathe Operator Level 1: Skill Checks (excerpt)

NIMS Skill Check	100	101	102	103	104	105	106
SC 01. Safely powers up a standard CNC lathe					X		
SC 07. Safely locates and sets workpiece zero					X	X	
SC 09. Sets geometry/tool offsets for each tool					X	X	
SC 10. Safely operates the lathe in automatic mode						X	X
SC 13. Confirms part compliance with measuring tools, incl. GD&T; records SPC data				X		X	X

X = standard linked to the course. NIMS descriptions shortened for this sample.

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COMPONENT 3

Course Designs

A complete design for every course

WHAT IT IS

Each Course Design turns the program plan into a course that faculty can teach. It provides key course information, credits and hours, target industry standards, related program outcomes, and the course competencies. Each competency has an assessment strategy, performance criteria, and learning objectives.

WHY IT MATTERS TO YOUR COLLEGE

- Faculty start with a finished course structure, not a blank page
- Competencies are written to WIDS standards: action-oriented, observable, and measurable
- Consistent designs across all courses make the program easier to staff, schedule, and review

SAMPLE EXCERPT CNCLATHE 100 CNC Machining Safety and Shop Practices

Description	This course prepares students to work safely in a CNC machining environment. Students learn to maintain a clean and safe work area, use PPE, and handle materials using approved safe practices. Upon completion, students will be able to apply safe work practices and respond correctly to hazardous conditions in a machining environment.
Credits / Hours	1 credit / 36 lab hours
Linked Program Outcome	Apply safe work practices in a machining environment
Target NIMS Standards	Credentialing Achievement Record: 1.1, 1.2, 2.2, 2.3 | Level I Duties: 5.1, 6.1, 6.2 | Level I KSAOs: 8 items
Course Competencies	1. Perform machine shop housekeeping and maintenance 2. Handle machining materials safely 3. Handle hazardous materials safely 4. Apply safe machining practices

Competency 3: Handle hazardous materials safely

DOMAIN **Psychomotor** LEVEL **Practicing**

LINKED PROGRAM OUTCOMES

Apply safe work practices in a machining environment

LINKED EXTERNAL STANDARDS

1.2 Candidate demonstrates the ability to read and understand MSDS information in order to properly protect themselves and the environment from potentially hazardous materials in the workplace.

6.2 Hazardous Materials Handling and Storage

1.1 Reading

1.2 Writing

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3.1 Applying Decision Rules

4.2 Personal Qualities

ASSESSMENT STRATEGY

Hazardous Material Case Study

Criteria: Performance will be successful when

1. analysis identifies the material's hazard classification using its SDS
2. analysis includes the correct container and storage location for a hazardous material
3. analysis includes the appropriate material identification instrument to confirm a material's identity
4. analysis includes the correct disposal method for the hazardous materials according to OSHA/EPA guidelines

LEARNING OBJECTIVES

- Interpret key sections of a Safety Data Sheet (SDS)
- Identify hazard classifications commonly found in a machining shop
- Identify proper containers and storage locations for hazardous materials
- Explain the use of material identification and concentration-measurement instruments
- Explain OSHA and EPA requirements for hazardous material storage and disposal

COMPONENT 4

Performance Assessment Tasks

Ready-to-use assessments with scoring guides

WHAT IT IS

Each competency comes with a Performance Assessment Task. Students get clear directions, and the instructor gets a scoring guide tied directly to the competency criteria.

WHY IT MATTERS TO YOUR COLLEGE

- Students are assessed on what they can do, the way employers assess them
- Criterion-based scoring guides make grading consistent across instructors and sections

SAMPLE EXCERPT **Assessment for Competency 3: Handle hazardous materials safely**

COMPETENCY

Handle hazardous materials safely

DIRECTIONS

1. Review the case study.
2. Identify the hazard classification(s) most likely associated with the cutting fluid, solvent, and mystery liquid described in incidents 1–3 and explain what information you would need from an SDS to confirm each.
3. Explain what Priya should do about the unlabeled cutting fluid container in incident 1, including how she should locate or request its SDS before use.

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4. Recommend the correct container type and storage location for the solvent described in incident 2 and explain why its current placement (near the floor drain, faded label) is a concern.
5. Describe how Priya should identify the unknown liquid in incident 3, including what material identification instruments or steps would be appropriate, and what she should do if she cannot confirm its identity.
6. Explain the correct disposal procedure for the used cutting fluid and oil-soaked rags in incident 4, referencing OSHA and/or EPA requirements, and address whether time pressure justifies skipping proper disposal.
7. Justify your recommendations throughout using OSHA and EPA requirements and guidelines and explain why every workstation handling hazardous materials should have ready access to SDS documentation (incident 5).

Case Study

Priya is a CNC operator on the second shift at a small machine shop. It's a busy night, and several material-related issues come up during her rotation.

1. A new 5-gallon container of water-soluble cutting fluid arrives at Priya's workstation with no label and no SDS attached. The shift supervisor says, "It's the same stuff we always use, just pour it into the sump."
2. Priya notices a partially full container of solvent sitting on the floor next to her machine, pushed against the wall near a floor drain. The container's label is faded and hard to read.
3. A coworker asks Priya to help identify a mystery liquid in an unmarked jug found in a corner of the shop, unsure whether it's coolant, cutting oil, or something else.
4. At the end of the shift, Priya has a small amount of used cutting fluid and several oil-soaked rags left over. The shop's waste containers are all the way across the building, and it's almost time to clock out.
5. A visiting maintenance technician asks Priya where the shop's SDS binder is kept, but she's not sure. She's never had to look for it before.

SCORING GUIDE

Criteria	Met	Not Met
Analysis identifies the material's hazard classification using its SDS	☐	☐
Analysis includes the correct container and storage location for a hazardous material	☐	☐
Analysis includes the appropriate material identification instrument to confirm a material's identity	☐	☐
Analysis includes the correct disposal method according to OSHA/EPA guidelines	☐	☐

Scoring Standard: A rating of "Met" is required on every criterion.

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NEXT STEPS

Why Partner with WIDS

WIDS has helped technical and community colleges build competency-based curriculum for decades, including all 16 colleges of the Wisconsin Technical College System and partners across the country. When you adopt this program, you get more than documents. You get a curriculum built on a proven design model and backed by a team experienced with program approval, accreditation, and industry alignment.

WHAT SETS THIS PROGRAM APART

- **Launch faster.** Start with a complete, aligned curriculum instead of building one from scratch.
- **Industry-backed.** Every course maps to national standards.
- **Competency-based.** Outcomes, competencies, and assessments connect from the first course to the capstone.
- **Yours to customize.** Adapt courses, assessments, and sequencing to your equipment, employers, and schedule.
- **Stackable.** Designed as an on-ramp to further technical certificates and degrees.

Ready to see the full curriculum?

Contact us to talk about your curriculum needs.

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